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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,608

07/13/2006

Ian Hall

207,419

8874

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ABELMAN, FRAYNE & SCHWAB
666 THIRD AVENUE, 10TH FLOOR
NEW YORK, NY 10017

EXAMINER

VENNE, DANIEL V

ART UNIT

PAPER NUMBER

3617

MAIL DATE

DELIVERY MODE

05/14/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/564,608	Applicant(s) HALL ET AL.	
	Examiner DANIEL V. VENNE	Art Unit 3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6,7,9,10,13-15,20-24 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6,7,9,10,13-15,20-24 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application was transferred from an examiner who retired from the USPTO.

Continued Examination under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/22/2009 has been entered.
2. Claims 1, 9, 13, 21, 23, 24 and 26 are amended.
3. Claims 2-5, 8, 11, 12, 16-19 and 25 are canceled.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 6, 7, 9, 10, 13 and 20-24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conway in view of Wasenius.

The vessel with the plurality of separate liquid cargo tanks is shown in figure 1 of Conway. That the tanks 2 are located below the deck plate 13 is shown in figure 1 of Conway.

Conway does not disclose tanks having a generally highest point above the baseline of

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the ship. In figure 8, Wasenius discloses middle tanks having a highest point above the baseline of the ship. It would have been obvious to modify the deck plate of Conway such that the middle tanks 14 have a highest point above the baseline of the ship similar to what is shown in figure 8 of Wasenius. Motivation to make such a change is to put a slope on the deck plate so that water will run off of the deck plate.

Conway discloses an aperture in figure 2 with an expansion trunk 15 positioned thereover; however, this aperture is not a plurality of apertures nor is it positioned substantially as close to the highest point of the tank above the baseline of the ship.

Further, in Conway the trunks 15 are secured in a fluid tight relation with said deck plate and surrounding said aperture in said deck plate above each tank to prevent leakage there between, to thereby form an exclusive expansion space to serve the liquid cargo in the respective tank there below, said expansion trunk being in fluid communication with pipelines 16 only for the venting of the tank, said at least one trunk not being associated with any pipelines to receive fluids from said tank.

Note in Wasenius the plurality of apertures beneath trunk 10 and note that trunk 10 in figure 8 and its related apertures are positioned as close to the highest point of the middle tanks above the baseline of the ship. It would further have been obvious to make the aperture beneath the trunks 15 of Conway a plurality of apertures and to position the middle tank trunks as close to the highest point of the middle tanks with respect to the baseline of the ship in view of the teaching of Wasenius. The use of a plurality of apertures would somewhat control the flow of gas into and out of the trunk while preventing sloshing of oil into the trunk. Further locating the trunk at the highest point of the middle tank would allow all the gas in the tank to enter the trunk 15 of Conway.

Conway does not disclose that each expansion trunk is located as far forward as possible; however, Wasenius in figure 2 teaches this concept. Motivation to locate the trunk at such a location is to have support for it provided by the forward bulkhead of the tank.

The combination of Conway and Wasenius does not disclose that the slots have a sufficient area such that there is approximately less than a 0.5 pound per square inch pressure difference between the opposing tank side and trunk side of the deck plates when the tank is being loaded at 200% of its maximum load, that the slots are between 2 and 3 centimeters wide and one half of the length of a deck plate, that the trunk 10 has an interior volume of at least 2% of the volume of the respective tank there below for liquid cargo storage, that the apertures are located as far aft on the tank as is possible, that the trunk has dimensions of between about 10 and 40 meters in length, about 5 and 15 meters in width and about 2 and 3 meters height, that the trunk encloses a volume at least that required for compliance with maritime regulations for an expansion space for liquid cargo storage, that the expansion space of each trunk for

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fluid cargo storage is at least about 2% of the amount of under deck space for use as fluid cargo storage, and that the slots are at least one half the length of the deck plate.

However, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to modify the trunks and apertures or slots of the combination of Conway and Wasenius such that the slots have a sufficient area such that there is approximately less than a 0.5 pound per square inch pressure difference between the opposing tank side and trunk side of the deck plates when the tank is being loaded at 200% of its maximum load, that the slots are between 2 and 3 centimeters wide and one half of the length of a deck plate, that the trunk 10 has an interior volume of at least 2% of the volume of the respective tank there below for liquid cargo storage, that the apertures are located as far aft on the tank as is possible, that the trunk has dimensions of between about 10 and 40 meters in length, about 5 and 15 meters in width and about 2 and 3 meters height, that the trunk encloses a volume at least that required for compliance with maritime regulations for an expansion space for liquid cargo storage, that the expansion space of each trunk for fluid cargo storage is at least about 2% of the amount of under deck space for use as fluid cargo storage, and that the slots are at least one half the length of the deck plate. Motivation to make these modifications are found in the fact that the apertures and trunk are going to be made a dimension and volume to meet any requirements specified by a governing body so that the vessel can be used for what it is intended.

The recited sizes and dimensions of the apertures or slots would be considered obvious to one of ordinary skill in the art as a matter of engineering design choice depending on the desired performance characteristics for safe passage of liquid cargo from the tanks.

With regard to claim 20, the alternative vent line will be line 21 of Conway.

With regard to claim 26, the at least two separate expansion trunks positioned on the deck plate and over the apertures will be the trunks for adjacent middle tanks 14. The trunks would be in communication with each other through pipe 18 of Conway. This pipe 18 is not disclosed as being located at the highest point of the respective tank. However, to locate this tank at the highest point of the respective tank would have been obvious in order to place the pipe close to the trunks 15 for the modified middle tanks.

With regard to the recited limitation of independent claims 1, 9, 21, 24 and 26 for the "trunk being located directly above the respective tank therebelow and as far forward as possible with respect to said tank"; this limitation is afforded insignificant patentable weight in the claims considering applicant's abstract which indicates "Alternatively, and depending upon obstructive constraints and vessel conditions, the trunk may be placed in other locations such as the aftermost on the tank or in between." This statement supports that this limitation is a matter of design choice. Therefore, it would have been obvious to one of ordinary skill in the art to which the subject matter pertains to locate the trunk directly above the respective tank therebelow and as far forward as possible

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with respect to the tank as a matter of design choice since applicant has not demonstrated that location of the trunk is a critical or essential feature of the invention. Similarly, the limitation "above each said tank" in claim 21 carries insignificant patentable weight in the claims, since the location of an expansion trunk above a cargo tank can be considered obvious to one of ordinary skill in the art as a matter of design choice based on the same reasoning.

With regard to the recited limitation in claim 26 for "said expansion trunks being in fluid communication with each other through at least one pipeline located at the highest point of the respective tank for venting of the tank", pipeline [16] of Conway connects to multiple expansion trunks [15], and the pipeline can be considered generally located at a highest point of the tanks (near deck plate).

With regard to the specific interior volume, range of length, range of width, and range of height for the expansion trunks, these dimensional attributes are considered obvious to one of ordinary skill in the art as a matter of engineering design choice in order to optimize available space and size requirements to suit desired characteristics for serving as a suitable expansion space for liquid cargo in the tanks below the trunks.

6. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conway and Wasenius as combined for claim 1 and further in view of Butterworth. Conway does not disclose that trunk 15 includes a crude oil washing pipeline and is configured for being connected with one or more removable crude oil washing machines or a permanently installed crude oil pipeline washing machine. Butterworth discloses that trunk 5 includes crude oil washing pipeline 12 and that the trunk 5 is configured for being connected with removable crude oil washing machine 7. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to modify trunk 15 of Conway such that it includes a crude oil washing pipeline similar to 12 of Butterworth and is configured for being connected with one or more removable crude oil washing machines similar to 7 of Butterworth or a permanently installed crude oil pipeline washing machine. Motivation to do so is to provide means to clean and scale the tanks 14 of Conway. With regard to claim 15, see the trunks 15 shown in figure 2 of Conway.

Response to Arguments

7. *Applicant's arguments filed 4/21/2009 are essentially the same arguments filed on 9/26/2008, and have been fully considered as indicated in the previous office action.*

Conclusion

8. This is a continuation of applicant's earlier Application No. 10/564608. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel V. Venne whose telephone number is (571) 272-7947. The examiner can normally be reached between 7:30AM - 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samuel J. Morano can be reached on (571) 272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the

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Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DVV

/Lars A Olson/
Primary Examiner, Art Unit 3617